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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,054	07/09/2003	Donald M. Justus	2003-IP-010088	9523

7590 02/16/2005

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EXAMINER	
STEPHENSON, DANIEL P	

ART UNIT	PAPER NUMBER
3672	

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/616,054	JUSTUS ET AL.	
	Examiner	Art Unit	
	Daniel P Stephenson	3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman et al. in view of Chen et al. Norman et al. (Fig. 1 and 2, col. 3 and 4) discloses a method of fracturing a subterranean formation. The method includes the steps of: injecting a fracture fluid (10) into a centrifugal pump (14); injecting a controlled amount of a sand suspension (20) into the centrifugal pump; and discharging (16) a mixture of the sand suspension and fracture fluid from the centrifugal pump having a certain concentration. The concentration of the mixture is monitored. The amount of the sand suspension being injected into the centrifugal pump is varied with a metering device until a desired concentration of the mixture is attained. The fracture fluid can be water with a gelling agent. The sand suspension can be a mixture of ~60 lb./gal of xanthan (col. 4 line 66) with anywhere from 0-26 lb./gal of sand (col. 4 line 34). The sand suspension will have water in the mixture. In an alternate embodiment the streams of the fracture fluid and particulate slurry flow through pressurizing pumps before getting to the T-junction or other mixing device, i.e. pump. The pump (14, 112, 122) is disclosed as a specific triplex pump, but it is stated that any other suitable pump can be used (col. 4 lines 53-56). Norman et al. does not specifically disclose that the metering device (22) is a pinch valve, nor is

it specifically disclosed that the formation being fractured is one in which the oil has been recovered.

Chen et al. (col. 10 lines 53-60) discloses using a pinch valve with particulate slurries that are being pumped. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the pinch valve of Chen on the apparatus of Norman et al. This would be done to allow the conduit to be fully opened as taught by Chen et al.

It is officially noticed that it is common practice in the art to stimulate a formation in which the oil has been removed. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the apparatus of Norman et al. in view of Chen et al. to fracture a formation in which the oil has been recovered.

3. Claims 2, 7, 8, 10, 11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman et al. in view of Chen et al. and Murphey et al. Norman et al. in view of Chen et al. shows all the limitations of the claimed invention, except, it does not disclose that there is a fluid additive injected into the centrifugal pump, nor does it disclose that there is a pump after the mixing pump for pumping into the formation. Murphey et al. discloses passing a multitude of streams into a mixing are then pumping the mixture downhole. These streams include a liquid additive that can be a breaker fluid. After the mixture is mixed it passes into a pump that injects it into the formation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the additive stream and the additional pump of Murphey et al. with the apparatus of Norman et al. and Chen et al. This would be done so that a breaker fluid could be introduced when Fracturing was complete and so that pressure was maintained for injection.

4. Claims 9, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman et al. in view of Chen et al. and Murphey et al. as applied to claim 8 above, and further in view of Cedillo et al. Norman et al. in view of Chen et al. and Murphey et al. shows all the limitations of the claimed invention, except, it does not disclose that the pinch valve, pumps, flow meter and densiometer are controlled through the use of a microprocessor and LAN. Cedillo et al. discloses using computer control to control the density of a well fracturing slurry. It uses a number of valves, pumps, flow meters and densiometers, that are all computer controlled. This inherently would use a local area network cable to communicate among the devices. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the computer control of Cedillo et al. with the apparatus of Norman et al. in view of Chen et al. and Murphey et al. This would be done so that all the mechanisms could be controlled from one location and allow the user readouts of the current status of the apparatus.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zingg et al., Malone et al. and Kiel all show similar elements to those of the present invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel P Stephenson whose telephone number is (703) 605-4969 until 3/31/05 at which time it will change to (571) 272-7035. The examiner can normally be reached on 8:30 - 5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Bagnell
Supervisory Patent Examiner
Art Unit 3672

DPS